

Weiss, et al.

Attorney Docket No. P05185US1

Amendments to the Claims

- Claim 1 (Previously presented): A method for manufacturing nanostructure patterns comprising:
overlaying a multilayer organic molecule resist on at least a portion of at least one parent structure selectively deposited on a substrate;
depositing a layer over the at least one parent structure and in contact with at least a portion of the multilayer organic resist; and
removing the multilayer organic molecule resist to leave a residual structure.
- Claim 2 (Original): The method of claim 1 wherein the step of removing the organic resist is chemical.
- Claim 3 (Original): The method of claim 1 wherein the step of removing the organic resist is electrochemical.
- Claim 4 (Original): The method of claim 1 wherein the step of removing the multilayer organic molecule resist removes a portion of the deposited layer.
- Claim 5 (Original): The method of claim 1 wherein the residual structure includes a line.
- Claim 6 (Original): The method of claim 1 wherein the residual structure includes a dot.
- Claim 7 (Original): The method of claim 1 wherein the residual structure includes a ring.
- Claim 8 (Original): The method of claim 1 wherein the residual structure includes two or more adjacent lines.

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Claim 9 (Previously presented): The method of claim 1 wherein a first portion of the at least one parent structure is a first material and a second portion of the at least one parent structure is a second material.

Claim 10 (Original): The method of claim 1 further comprising imaging the residual structure with electron microscopy.

Claim 11 (Original): The method of claim 1 further comprising imaging the residual structure with scanning probe microscopy.

Claim 12 (Original): The method of claim 1 wherein the substrate is silicon.

Claim 13 (Original): The method of claim 1 wherein the organic molecule resist is a mercaptoalkanoic acid.

Claim 14 (Original): The method of claim 1 wherein the layers of the multilayer organic molecule resist are connected with ions.

Claim 15 (Original): The method of claim 13 wherein each layer of organic molecules is connected with Cu^{2+} ions.

Claim 16 (Previously presented): The method of claim 1 further comprising smoothing the at least one parent structure.

Claim 17 (Original): The method of claim 16 wherein smoothing is accomplished chemically.

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Claim 18 (Original): The method of claim 16 wherein smoothing is accomplished electrochemically.

Claim 19 (Previously presented): The method of claim 1 further comprising designing the at least one parent structure to result in the residual structure having a width less than a width of the at least one parent structure.

Claim 20 (Previously presented): The method of claim 19 wherein the step of designing includes designing the at least one parent structure to have at least one concave segment.

Claim 21 (Original): The method of claim 1 further comprising removing a portion of the residual structure.

Claim 22 (Original): The method of claim 1 further comprising:
overlaying a second multilayer organic molecule resist on at least a portion of the residual structure;
depositing a second layer over the residual structure and in contact with at least a portion of the second multilayer organic resist; and
removing the second multilayer organic molecule resist to leave a second residual structure.

Claim 23 (Original): The method of claim 22 further comprising smoothing the residual structure.

Claim 24 (Original): The method of claim 23 wherein smoothing is accomplished chemically.

Claim 25 (Original): The method of claim 23 wherein smoothing is accomplished electrochemically.

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Claim 26 (Original): The method of claim 22 further comprising designing the residual structure to reduce the second residual structure size.

Claim 27 (Original): The method of claim 22 wherein the second layer adheres only to the residual structure.

Claim 28 (Original): The method of claim 22 further comprising removing a portion of the second residual structure.

Claim 29 (Original): The method of claim 22 further comprising removing a portion of a subsequent generation residual structure.

Claim 30 (Withdrawn): The nanostructure of claim 29 wherein at least a portion of the residual structure has a width of less than approximately 100 nm.

Claim 31 (Withdrawn): The nanostructure of claim 30 wherein at least a portion of the residual structure has a width of less than approximately 100 nm.

Claim 32 (Withdrawn): The nanostructure of claim 31 wherein at least two traces of the residual structure are separated by a spacing of approximately 3 nm to approximately 40 nm.

Claim 33 (Previously presented): The method of claim 1 further comprising designing the at least one parent structure to result in the residual structure being spaced more closely than the at least one parent structure.